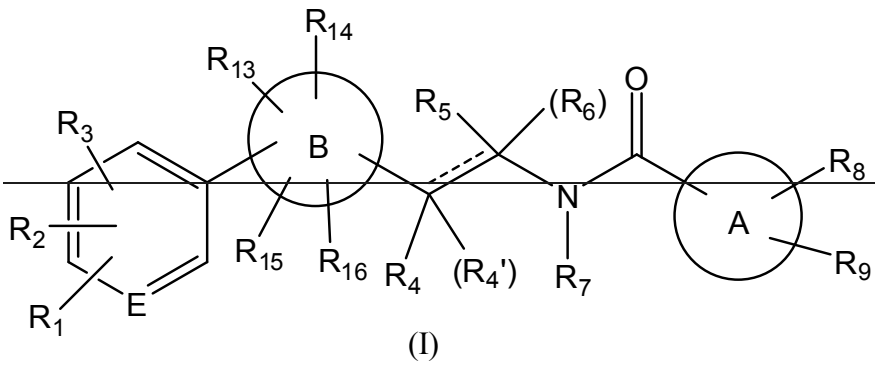
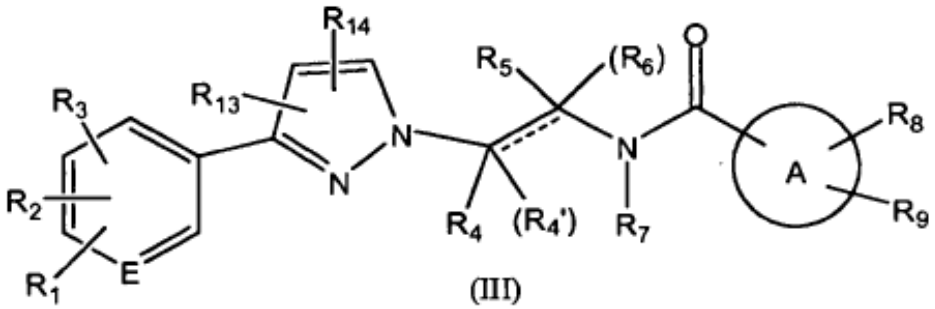
Claims

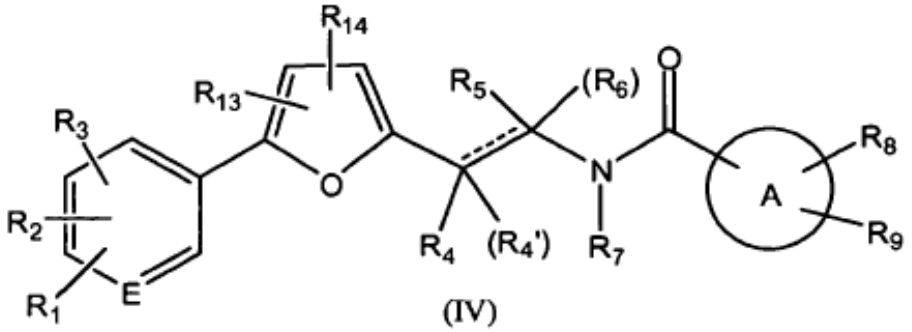
1. A compound of formula ~~(I)~~ (III), (IV) or (V)



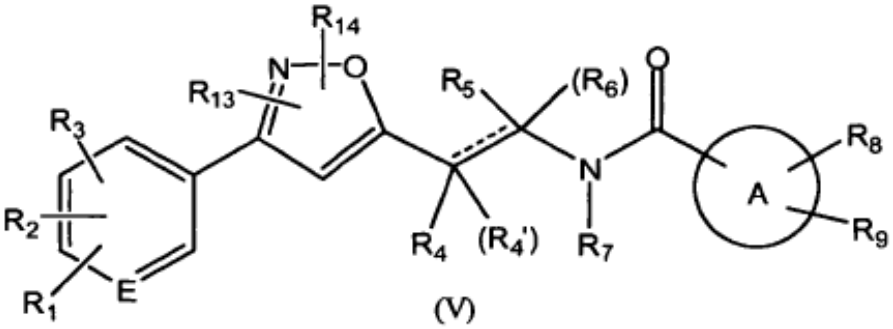
(I)



(III)



(IV)



(V)

wherein

R_1 is hydrogen, halogen, cyano, nitro or optionally substituted 5- or 6-membered heterocyclic ring;

R_2 is hydrogen, halogen, cyano, nitro, amino, C_{1-7} alkyl, halo C_{1-7} alkyl, hydroxy C_{1-7} alkyl, thio C_{1-7} alkyl or C_{1-7} alkoxy;

R_3 is hydrogen, halogen or C_{1-7} alkyl,

or R_2 and R_3 together with the carbon atoms to which they are attached form a optionally substituted 5- or 6-membered carbocyclic or heterocyclic ring;

wherein at least two of R_1, R_2 and R_3 are not hydrogen;

R_4, R_4', R_5, R_6 and R_7 are, independently, hydrogen, C_{1-7} alkyl, halo C_{1-7} alkyl or hydroxy C_{1-7} alkyl;

ring atom E is C or N;

dashed line means an optional double bond;

A is a 5 -12 membered heterocyclic ring;

~~B is a 5-membered heterocyclic ring wherein 1-3 of the members are heteroatoms selected from N, O and S~~;

R_8 is hydrogen, hydroxy, halogen, nitro, amino, cyano, oxo, C_{1-7} alkyl, C_{1-7} alkoxy, halo C_{1-7} alkyl, hydroxy C_{1-7} alkyl, cyano C_{1-7} alkyl, amino C_{1-7} alkyl, oxo C_{1-7} alkyl, C_{1-7} alkoxy C_{1-7} alkyl, methylsulfonamido C_{1-7} alkyl, oxiran C_{1-7} alkyl, C_{1-7} alkylamino, hydroxy C_{1-7} alkylamino, C_{1-7} alkoxy C_{1-7} alkylamino, C_{1-7} alkylamino C_{1-7} alkyl, hydroxy C_{1-7} alkylamino C_{1-7} alkyl, hydroxyimino C_{1-7} alkyl, halo C_{1-7} alkylhydroxy C_{1-7} alkyl, $-C(O)R_{10}$, $-OC(O)R_{17}$, $-NH-C(O)R_{18}$ or an optionally substituted 5 - 12 membered carbocyclic or heterocyclic ring, each group optionally linked to A-ring via C_{1-7} alkylene linker;

R_9 is hydrogen, halogen, C_{1-7} alkyl, oxo, hydroxy C_{1-7} alkyl, oxo C_{1-7} alkyl or an optionally substituted 5 or 6 membered carbocyclic or heterocyclic ring, each group optionally linked to A-ring via C_{1-7} alkylene linker;

R_{10} is hydrogen, hydroxy, C_{1-7} alkyl, hydroxy C_{1-7} alkyl, halo C_{1-7} alkyl, C_{1-7} alkoxy, $NR_{11}R_{12}$, or an optionally substituted 5 - 12 membered carbocyclic or heterocyclic ring;

R_{11} is hydrogen, C_{1-7} alkyl, hydroxy C_{1-7} alkyl, amino C_{1-7} alkyl, C_{1-7} alkyl amino C_{1-7} alkyl,

R_{12} is hydrogen or C_{1-7} alkyl;

R_{13} and R_{14} are, independently, hydrogen, C_{1-7} alkyl, halogen, cyano or hydroxy C_{1-7} alkyl;

~~R_{15} and R_{16} are, independently, hydrogen, oxo, thioxo, C_{1-7} alkyl or cyano;~~

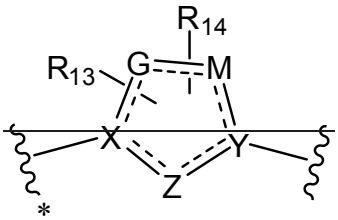
R_{17} is C_{1-7} alkyl, C_{1-7} alkoxy, amino C_{1-7} alkyl or C_{1-7} alkylamino C_{1-7} alkyl;

R_{18} is C_{1-7} alkyl, amino C_{1-7} alkyl or C_{1-7} alkylamino C_{1-7} alkyl;

~~and~~ or is a pharmaceutically acceptable salt thereof wherein C_{1-7} alkyl is a saturated

straight, branched or cyclized chain radical having 1 to 7 carbon atoms, and C_{1-7} alkylene linker is a saturated straight or branched C_{1-7} alkyl chain which connects two groups together.

~~2. A compound according to claim 1, wherein B is~~



(1')

~~wherein Z is O, N, C=O or C=S;~~

~~X is C or N;~~

~~Y is C or N;~~

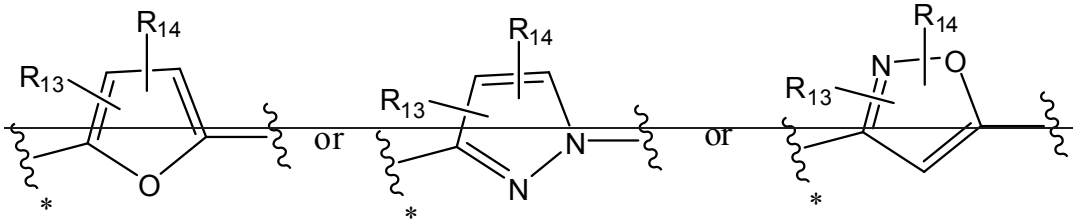
~~G is CH, C=O or C=S;~~

~~M is CH or O;~~

~~R_{13} and R_{14} are, independently, hydrogen, C_{1-7} alkyl, halogen, cyano or hydroxy C_{1-7} alkyl;~~

~~dashed line means an optional double bond, and the asterisk denotes the point of attachment to the ring.~~

~~3. A compound according to claim 1 or 2, wherein B is a group of formula (2'), (3') or (4')~~



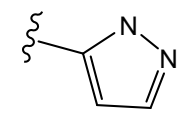
(2') (3') (4')

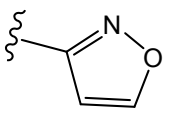
~~wherein~~

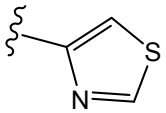
~~R_{13} and R_{14} are, independently, hydrogen, C_{1-7} alkyl, halogen, cyano or hydroxy C_{1-7} alkyl; and~~

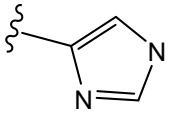
~~the asterisk denotes the point of attachment to the ring.~~

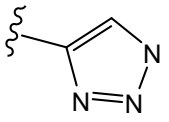
~~42~~. A compound according to claim 1 ~~any of claims 1 to 3~~, wherein ring A is any one of the following groups or tautomers thereof

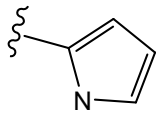

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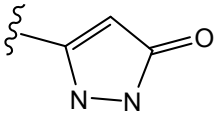

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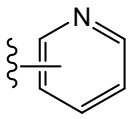

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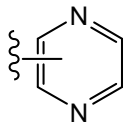

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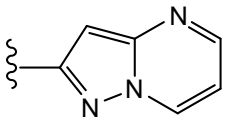

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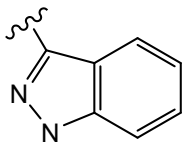

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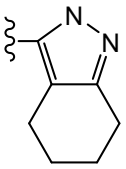

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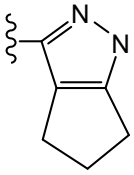

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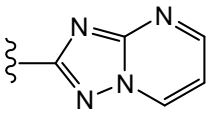

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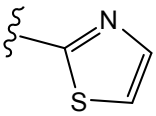

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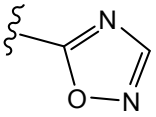

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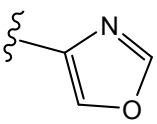

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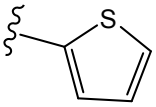

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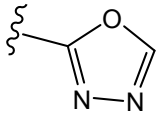

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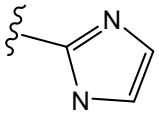

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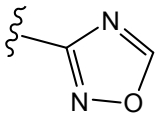

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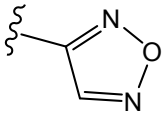

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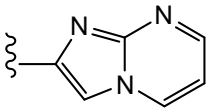

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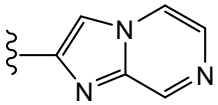

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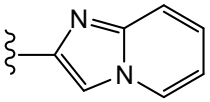

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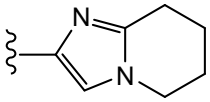

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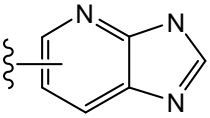

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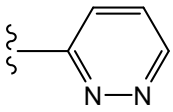

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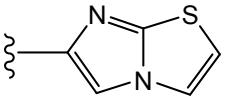

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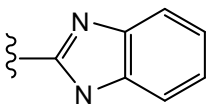

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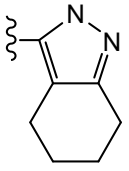

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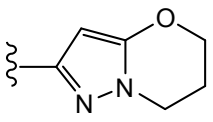

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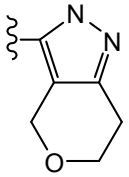

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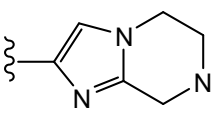

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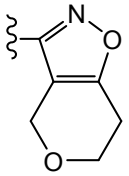

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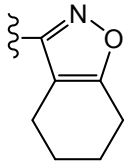

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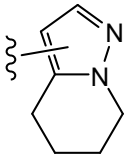

(36')


(37')


(38')

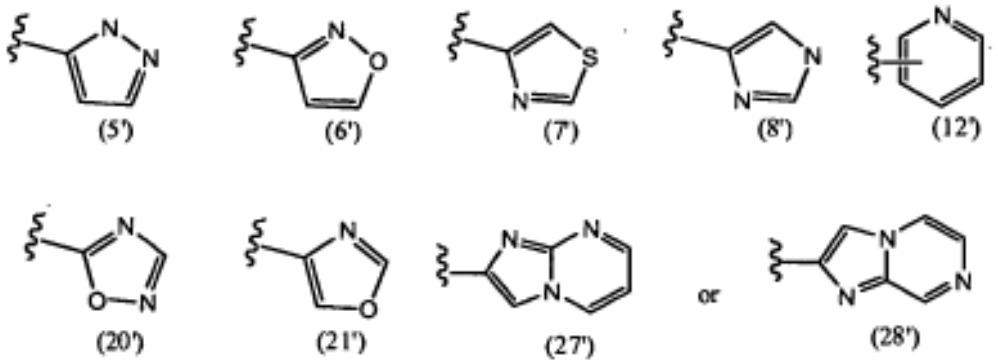

(39')


(40')


(41')

3. A compound according to claim 1 or 2, wherein ring atom E is C,

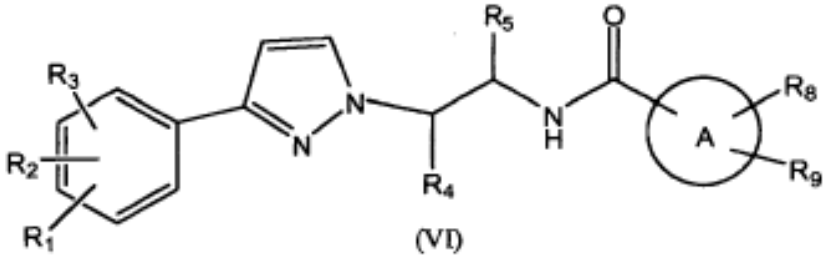
R_1 is halogen, C_{1-7} alkyl, cyano, nitro or halo C_{1-7} alkyl,
R_2 is cyano, halogen or nitro,
R_3 is hydrogen, halogen or C_{1-7} alkyl,
A is any one of



or tautomers thereof,

R_{13} and R_{14} are hydrogen,
R_4 (and R_4'if applicable) is hydrogen or methyl
R_5 is hydrogen or C_{1-7} alkyl,
R_6 (if applicable) is hydrogen,
R_8 is hydrogen, C_{1-7} alkyl,hydroxy C_{1-7} alkyl, halogen, hydroxyimino C_{1-7} alkyl, or a 5 or 6 membered heterocyclic ring or $-C(O)R_{10}$ wherein R_{10} is C_{1-7} alkyl, and
R_9 is hydrogen, halogen or C_{1-7} alkyl.

4. A compound according to claim 1, which is of formula (VI)



(VI)

wherein R_1 is halogen, methyl, cyano, nitro or trifluoromethyl; R_2 is cyano, halogen or nitro; R_3 is hydrogen, halogen or methyl; R_4 is hydrogen or methyl; and R_5 is hydrogen or C_{1-3} alkyl.

5. A compound according to claim 4 ~~any of claims 1 to 4~~, wherein

~~ring atom E is C,~~

R_1 is halogen, ~~C_{1-7} alkyl, cyano, nitro or halo C_{1-7} alkyl,~~

R_2 is cyano, ~~halogen or nitro,~~

R_3 is hydrogen, halogen or ~~C_{1-7} alkyl~~ methyl~~,~~;

R_4 is hydrogen,

and R_5 is methyl.

~~A is any one of groups (5'), (6'), (7'), (8'), (12'), (20'), (21'), (27') and (28') or tautomers thereof,~~

~~B is a group of formula (2'), (3') or (4') substituted by R_{13} and R_{14}, which are hydrogen,~~

~~R_4 (and R_4' if applicable) is hydrogen or methyl,~~

~~R_5 is hydrogen or C_{1-7} alkyl,~~

~~R_6 (if applicable) is hydrogen,~~

~~R_8 is hydrogen, C_{1-7} alkyl, hydroxy C_{1-7} alkyl, halogen, hydroxyimino C_{1-7} alkyl, a 5 or 6 membered heterocyclic ring or $-C(O)R_{10}$ wherein R_{10} is C_{1-7} alkyl, and R_9 is hydrogen, halogen or C_{1-7} alkyl.~~

6. ~~Use of a compound of formula (I')~~ A compound according to claim 1 which is

N-(2-(5-(3,4-dichlorophenyl)furan-2-yl)ethyl)-3-(morpholine-4-carbonyl)-1H-pyrazole-5-carboxamide;

(*S/R*)-N-(1-(5-(3,4-dichlorophenyl)furan-2-yl)propan-2-yl)-3-(pyridin-4-yl)-1H-pyrazole-5-carboxamide;

(*S*)-N-(1-(3-(4-cyano-3-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(furan-2-yl)-1H-pyrazole-5-carboxamide;

(*S*)-3-acetyl-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-1H-pyrazole-5-carboxamide;

N-(2-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)ethyl)-5-(1-methyl-1H-pyrazol-4-yl)isoxazole-3-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-(1-methyl-1H-pyrazol-4-yl)isoxazole-3-carboxamide;

N-(2-(3-(3,4-dicyanophenyl)-1H-pyrazol-1-yl)ethyl)-3-(pyridin-3-yl)-1H-pyrazole-5-carboxamide;

(*R*)-3-acetyl-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-1H-pyrazole-5-carboxamide;

N-((*S*)-1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)-propan-2-yl)-3-(1-hydroxyethyl)-1H-pyrazole-5-carboxamide;

(*S*)-2-amino-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)thiazole-4-carboxamide;

(*R*)-3-acetyl-N-)1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)butan-2-yl)-1 H-pyrazole-5-carboxamide;

(*R*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)thiazole-4-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(pyridin-3-yl)-1H-pyrazole-5-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)thiazole-4-carboxamide;

N-(2-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)ethyl)-3-(furan-2-yl)-1H-pyrazole-5-carboxamide;

3-tert-butyl-N-(1-(5-(4-cyano-3-(trifluoromethyl)phenyl)furan-2-yl)propan-2-yl)-1H-pyrazole-5-carboxamide;

3-tert-butyl-N-(2-(5-(3-chloro-4-cyano-2-methylphenyl)furan-2-yl)ethyl)-1H-pyrazole-5-carboxamide;

N-(2-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)ethyl)-5-(pyridin-3-yl)-1H-pyrazole-3-carboxamide;

(*S*)-5-acetyl-N-(1-(3-(4-cyano-3,5-diflurophenyl)-1H-pyrazol-1-yl)propan-2-yl) -1H-pyrazole-3-carboxamide;

(*R*)-N-(1-(3-(4-cyano-3-(trifluoromethyl)phenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(furan-2-yl)-1H-pyrazole-5-carboxamide;

(*S*)-3-acetyl-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-1H-pyrazole-5-carboxamide;

N-((*S*)-1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(1-hydroxyethyl)-1H-pyrazole-5-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-methylisoxazole-3-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)thiazole-4-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-(trifluoromethyl)-1H-pyrazole-3-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(furan-2-yl)-1H-pyrazole-5-carboxamide;

(*R*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-(pyridin-3-yl)-1H-pyrazole-3-carboxamide;

(*R*)-N-(1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-(furan-2-yl)-1H-pyrazole-5-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-(2-methylthiazol-4-yl)-1H-pyrazole-3-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-methyl-1,2,4-oxadiazole-5-carboxamide;

(*R*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-2-morpholinothiazole-4-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-2-(1H-pyrazol-4-yl)thiazole-4-carboxamide;

(*S*)-N-{1-[3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl]propan-2-yl}-2-methyl-1H-imidazole-4-carboxamide;

N-((*S*)-1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-5-(1-hydroxyethyl)isoxazole-3-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-3-ethyl-1,2,4-oxadiazole-5-carboxamide;

N-((*S*)-1-(3-(3-chloro-4-cyano-2-methylphenyl)-1H-pyrazol-1-yl)propan-2-yl)-2-(1-hydroxyethyl)thiazole-4-carboxamide;

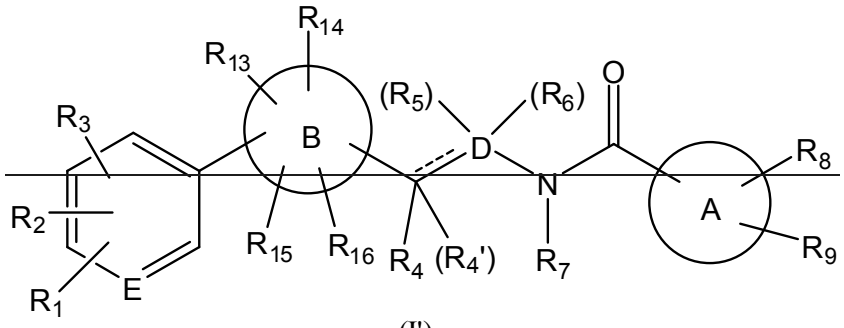
(*R*)-N-(2-(3-(4-cyano-3,5-difluorophenyl)-1H-pyrazol-1-yl)propyl)-2-(cyanomethyl)thiazole-4-carboxamide;

(*S*)-N-{1-[3-(3-chloro-4-cyano-5-fluorophenyl)-1H-pyrazol-1-yl]propan-2-yl}-2-methyl-1H-imidazole-4-carboxamide;

(*S*)-N-(1-(3-(3-chloro-4-cyano-5-fluorophenyl)-1H-pyrazol-1-yl)propan-2-yl)imidazo[1,2-a]pyrimidine-2-carboxamide;

(*S*)-3-acetyl-N-(2-(3-(4-cyano-3,5-difluorophenyl)-1H-pyrazol-1-yl)propyl)-1H-pyrazole-5-carboxamide; or

(*S*)-N-(1-(3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl)propan-2-yl)-2,4,6,7-tetrahydropyrano[4,3-c]pyrazole-3-carboxamide.



(I')

~~wherein~~

~~R_1 is hydrogen, halogen, cyano, nitro or optionally substituted 5- or 6-membered heterocyclic ring;~~

~~R_2 is hydrogen, halogen, cyano, nitro, amino, C_{1-7} alkyl, halo C_{1-7} alkyl, hydroxy C_{1-7} alkyl, thio C_{1-7} alkyl or C_{1-7} alkoxy;~~

~~R_3 is hydrogen, halogen or C_{1-7} alkyl,~~

~~or R_2 and R_3 together with the carbon atoms to which they are attached form a optionally substituted 5- or 6-membered carbocyclic or heterocyclic ring;~~

~~wherein at least two of R_1, R_2 and R_3 are not hydrogen;~~

~~R_4, R_4', R_5, R_6 and R_7 are, independently, hydrogen, C_{1-7} alkyl, halo C_{1-7} alkyl or hydroxy C_{1-7} alkyl;~~

~~ring atom E is C or N;~~

~~D is C or N;~~

~~dashed line means an optional double bond;~~

~~A is a 5 -12 membered heterocyclic ring;~~

~~B is a 5-membered heterocyclic ring wherein 1-3 of the members are heteroatoms selected from N, O and S;~~

~~R_8 is hydrogen, hydroxy, halogen, nitro, amino, cyano, oxo, C_{1-7} alkyl, C_{1-7} alkoxy, halo C_{1-7} alkyl, hydroxy C_{1-7} alkyl, cyano C_{1-7} alkyl, amino C_{1-7} alkyl, C_{1-7} alkoxy C_{1-7} alkyl, methylsulfonamido C_{1-7} alkyl, oxiran C_{1-7} alkyl, C_{1-7} alkylamino, hydroxy C_{1-7} alkylamino, C_{1-7} alkoxy C_{1-7} alkylamino, C_{1-7} alkylamino C_{1-7} alkyl, hydroxy C_{1-7} alkylamino C_{1-7} alkyl, hydroxyimino C_{1-7} alkyl, halo C_{1-7} alkylhydroxy C_{1-7} alkyl, $-C(O)R_{10}$, $-OC(O)R_{17}$, $-NH-C(O)R_{18}$ or an optionally substituted 5 - 12 membered carbocyclic or heterocyclic ring, each group optionally linked to A-ring via C_{1-7} alkylene linker;~~

~~R_9 is hydrogen, halogen, C_{1-7} alkyl, oxo, or an optionally substituted 5 or 6 membered carbocyclic or heterocyclic ring, each group optionally linked to A-ring via C_{1-7} alkylene linker;~~

~~R_{10} is hydrogen, hydroxy, C_{1-7} alkyl, hydroxy C_{1-7} alkyl, halo C_{1-7} alkyl, C_{1-7} alkoxy, $NR_{11}R_{12}$, or an optionally substituted 5 - 12 membered carbocyclic or heterocyclic ring;~~

~~R_{11} is hydrogen, C_{1-7} alkyl, hydroxy C_{1-7} alkyl, amino C_{1-7} alkyl, C_{1-7} alkyl amino C_{1-7} alkyl,~~

~~R_{12} is hydrogen or C_{1-7} alkyl;~~

~~R_{13} and R_{14} are, independently, hydrogen, C_{1-7} alkyl, halogen, cyano, halogen C_{1-7} alkyl or hydroxy C_{1-7} alkyl;~~

~~R_{15} and R_{16} are, independently, hydrogen, oxo, thioxo, C_{1-7} alkyl or cyano;~~

~~R_{17} is C_{1-7} alkyl, C_{1-7} alkoxy, amino C_{1-7} alkyl or C_{1-7} alkylamino C_{1-7} alkyl;~~

~~R_{18} is C_{1-7} alkyl, amino C_{1-7} alkyl or C_{1-7} alkylamino C_{1-7} alkyl;~~

~~and pharmaceutically acceptable salts thereof;~~

~~in the manufacture of a medicament for the prevention or treatment of androgen receptor (AR) dependent disorders.~~

7. A pharmaceutical composition comprising a compound of ~~claim 1 together~~ any one of the preceding claims together with a pharmaceutically acceptable carrier.

8. A compound as claimed in any one of claims 1 to 6 for use in a method for the treatment or prevention of an androgen receptor dependent condition~~s~~, comprising administering to a subject in need thereof a therapeutically effective amount of ~~a~~ said compound ~~of claim 1~~.

9. A compound for use ~~method~~ according to claim 8, wherein the androgen receptor dependent condition is prostate cancer.

10. A compound for use according to claim 9 wherein the ~~method for the treatment or prevention of~~ androgen receptor dependent condition~~s, comprising administering to a subject in need thereof a therapeutically effective amount of a compound of formula (I') as defined in claim 6~~ is castration-resistant prostate cancer.

~~11. A method according to claim 10, wherein the androgen receptor dependent condition is prostate cancer.~~

11. Use of a compound as claimed in any one of claims 1 to 6 in the manufacture of a medicament for the prevention or treatment of an androgen receptor (AR) dependent disorder.

12. Use according to claim 11 wherein the androgen receptor dependent condition is prostate cancer.

13. Use according to claim 12 wherein the androgen receptor dependent condition is castration-resistant prostate cancer.